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**BASTION – FROM BASIC TO
TRANSLATIONAL RESEARCH
IN ONCOLOGY**

**Report on the visit of Marta Siernicka in the Centre for Infectious
Medicine, Department of Medicine, Karolinska University Hospital
Huddinge, Stockholm, Sweden within 7PR21/BASTION/WP1
(Twinning)**

Visitor: Marta Siernicka, PhD student

Host: Karl-Johan Malmberg, Group Leader, M.D., Ph.D., Professor, Centre for Infectious Medicine, Department of Medicine, Karolinska University Hospital Huddinge, Stockholm, Sweden

From May 9th until July 10th, 2015 I was visiting the Centre for Infectious Medicine (CIM) at The Department of Medicine, Karolinska University Hospital Huddinge Stockholm, Sweden. The studies within the CIM are focused around of the human immune system and infection-immunity in humans. Many of the groups within CIM are involved in the NK cell biology studies and all of them work in close collaboration. The team of Professor Karl-Johan Malmberg investigate the molecular and cellular basis for NK cell differentiation and repertoire formation in health and disease. Their main goal is to study the role of killer cell immunoglobulin-like receptors (KIR) in function of human NK cells.

The main focus of my visit was to get familiar with a multicolor flow cytometry and many sophisticated assays to determine NK cell functionality on the subset level. At the beginning of my stay I learnt how to design and compensate multicolor staining panels, up to at least 14 colors within one sample. I participated in experiments regarding optimization of the NK cells expansion protocol for the Phase I/II clinical trial based on adoptive transfer of NK cells across HLA barriers. I have learnt new method to study NK cells proliferation with simultaneous analysis of NK cell degranulation, cytokine production, contents of lytic granules and phenotype within particular proliferating NK cell subsets. Moreover, I got acquainted with the analysis of flow cytometry data using FlowJo software.

At CIM I started the optimization of the new combined functional and cytotoxicity assay, which could be very useful to analyze both NK cell functionality and killing of target tumor cells in one sample within one assay. I also tested the influence of selected cell signaling pathway inhibitors on NK cells proliferation and phenotype. All the methods I have learned during my twinning I will apply and use to improve my current research at the Department of Immunology, WUM, Poland.

Moreover, during my stay at Karolinska Institutet I had an opportunity to participate in many lectures and scientific meetings with many teams working at CIM as well as with invited speakers. I had a chance to meet Mario Roederer, Vaccine Research Center, NIAID, NIH, USA who is the world leading scientist in flow cytometry and participate in his opening lecture during the launch of the "KI Flow Club".

At the end of my stay we discussed our data and topics for further collaboration.



Marta Siernicka at the entrance to the Karolinska Institutet, Huddinge.